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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,786	02/28/2002	Russell B. Stuber	L13.12-0174/01-262	8978

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10/14/2005

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EXAMINER

KING, JUSTIN

ART UNIT	PAPER NUMBER
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2111

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/086,786

Applicant(s)

STUBER ET AL

Examiner

Justin I. King

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 9-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/18/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 4/18/05 recites a PG-PUB 2003/00658, which is an incorrect PG-PUB number. The PG-PUB number must be an 11-digit number. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e).

Drawings

2. Figure 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3 and 6 recite the limitation "the first identification". There is insufficient antecedent basis for this limitation in the claim. Claims 4-5 and 7-8 are rejected because they incorporate claim 3's limitations.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "a command from a master device" in the last limitation. It is unclear whether the command in the last limitation is the same command in the first limitation, and whether the control device receives from the master device the command or the control device merely receives the master's device's command. Claims 2-8 are rejected because they incorporate the parent claim's limitations.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of the admitted prior art and Marisetty (U.S. Patent No. 5,574,868).

Referring to claim 1: The admitted prior art discloses that the slave device has queued several commands it is unable to service within a prescribed criterion, and the slave device releases one of the split master devices when the slave device is ready (Specification, page 2, last paragraph). The slave device's means for queuing the commands is equivalent to the command register, and the slave device's means to release the split master masters is equivalent to the claimed control device. The admitted prior art does not explicitly disclose a staging register for storing a master device's identification whose command is highest in order.

Marisetty discloses an early bus request scheme (figure 4). Marisetty discloses that the split transaction bus is a well-known system component (column 1, lines 26-28); Marisetty

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further discloses that response time is increased due to the sequential nature of the read, bus arbitration, grant, and data transmission operations (column 2, lines 15-17). Marisetty teaches one to improve and reduce such latency by implementing an early bus grant prediction technique (column 2, lines 28-41). Marisetty discloses a FIFO to store the retrieved data; the stored data is equivalent to the identification of a master device (column 2, lines 28-41). Hence, it would have been obvious to one having ordinary skill in the computer art to adapt Marisetty onto the admitted prior art because Marisetty teaches one to improve and reduce such latency by implementing an early bus grant prediction technique.

Referring to claim 2: Marisetty discloses early bus arbitration (figure 4). Since the slave device must remove the block from the requesting master device so the master device can re-arbitrate the bus (Specification, page 2, lines 18-23), Marisetty teaches comparing the identification of the master device and releases the split of that master device.

10. Claims 3-4 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of the admitted prior art, Marisetty, and Durdan et al. (U.S. Patent No. 5,058,006).

Referring to claims 3 and 6: The disclosures of the admitted prior art and Marisetty are stated above; neither discloses the validation register. Durdan discloses a practice of request filtering. Durdan discloses filtering the number of invalidates to be propagated onto the bus (abstract, column 5, lines 21-29). Durdan discloses that processing every transaction may saturate the busload in preserving the data coherency (column 4, last three paragraphs, column 5, first three paragraphs). Durdan teaches servicing of invalidates for every transaction would occupy a large amount of shared system resources. Durdan's means to filter invalidates is

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equivalent to the claimed validation register. Hence, it would have been obvious to one having ordinary skill in the computer art to adopt Durdan's teaching onto the admitted prior art and Marisetty because Durdan teaches one to reduce the loading on the shared system resources by filtering the number of invalidates to be propagated on the bus.

Referring to claims 4 and 7: Durdan discloses that the interface unit monitors the system bus and detects transactions. Durdan's bus transactions are equivalent to the commands from the master devices, and Durdan's interface unit's invalidation handling is equivalent to the claimed response to a command from the master device.

Allowable Subject Matter

11. Examiner withdraws the allowable subject matter in the previous Office Action in view of updated search.

12. Claims 5 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form **including all of the limitations of the base claim and any intervening claims.**

Referring to claims 5 and 8: the prior arts on record do not disclose or explicitly teach a look-ahead split release apparatus with a structure of a counter providing the validation register the empty status of the return command register, and the validation register inhibits the validation when receives the empty indication from the counter.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,256,694 to Fenwick et al.: Fenwick discloses a distributed early arbitration for accessing a system bus of a computer system.


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin I. King whose telephone number is 571-272-3628. The examiner can normally be reached on Monday through Friday, 9:00 am to 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on 571-272-3676 or on the central telephone number, (571) 272-2100. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

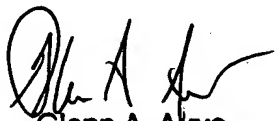
Lastly, paper copies of cited U.S. patents and U.S. patent application publications will cease to be mailed to applicants with Office actions as of June 2004. Paper copies of foreign patents and non-patent literature will continue to be included with office actions. These cited U.S. patents and patent application publications are available for download via the Office's

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PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov), from the Office of Public Records and from commercial sources. Applicants are referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 for information on this policy. Requests to restart a period for response due to a missing U.S. patent or patent application publications will not be granted.



Justin King
October 3, 2005



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